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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,754	11/08/2001	Yugang Ma	450111-03686	2604

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EXAMINER
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YAO, KWANG BIN

ART UNIT	PAPER NUMBER
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2667

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/006,754	<b>Applicant(s)</b> MA ET AL.	
	<b>Examiner</b> Kwang B. Yao	<b>Art Unit</b> 2667	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-10 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 4 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-10, 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rademacher (US 6,570,918) in view of Malkemes et al. (US 6,647,015).

Rademacher discloses a communication system comprising the following features: regarding claims 1, 8 & 15, a receiver (Figure 3) for a communication system including a plurality of base stations and a plurality of receivers (Figure 1), each base station transmitting a respective CDMA signal including data intended for each of a set of one or more of the receivers, the data intended for each of the receivers being encoded in the CDMA signal using a respective spreading code for that receiver (Column 5, lines 59-67 & Column 6, lines 1-6); The receiver including: Reception means for receiving a signal including CDMA signals (Figure 3, box 20, receiving signals coming into A/D converter); One branch processing means, the reception means being capable of -transmitting the received signal to each branch processing

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means, the or each branch processing means corresponding to a respective one of the base stations and arranged to modify the received signal by the operations of (Column 3, lines 4-10): (i) Data equalization, based on a respective filter using a respective set of weights (Column 4, lines 32-36); and (ii) Decoding the spreading code for the receiver (Column 2, lines 50-58); decision means for using the output of the or each branch processing means to generate an error signal and an estimate of the data in the received signal intended for the receiver (Column 7, lines 30-60); and adaptation means for modifying the or each set of weights using the error signal (Column 7, lines 30-60); regarding claims 2 & 9, Rademacher disclosed a receiver (Figure 3) for use in a communications system in which the CDMA signal transmitted by each base station is encoded using a respective scrambling code for that base station, and said decoding uses the scrambling code of the corresponding base station (Column 4, lines 59-67. Base band signals detected at the receiver s will know which data detected from which base station from the detected header data). Regarding claims 5 & 12, Rademacher disclosed a receiver in which the detection means is arranged to generate said error signal as the difference between said combined signal and a correction signal (Column 9, lines 19-25). Regarding claims 6 & 13, Rademacher disclosed a receiver in which said detection means includes a non-linear function unit for generating said correction signal from said combined signal using a non-linear function (Figure 4, box 40; Column 7, lines 40-46). Regarding claims 7 & 14, Rademacher disclosed a receiver in which the detection means includes a training sequence input for receiving a training sequence, and a switch for selectively deriving said correction signal as a signal input to said training sequence input or the output of the decision means (Column 12, lines 3-17).

Rademacher does not disclose the following features: regarding claims 1, 8, 15, a plurality of branch processing means, the reception means being capable of transmitting the received signal to each branch processing means, each branch processing means corresponding to a respective one of the base stations and arranged to modify the received signal by the operations of: (i) data equalization, based on a respective filter using a respective set of weights; and (ii) decision means for using an output of each branch processing means to generate an error signal and an estimate signal indicative of the data in the received signal intended for the receiver; and adaptation means for modifying the respective set of weights using the error signal; regarding claims 3 & 10, said decision means combines the outputs of the plurality of branch processing means into a combined signal.

Malkemes et al. disclose a communications system comprising the following features: regarding claims 1, 8, 15, a plurality of branch processing means (Fig. 3, SPATIAL EQUALIZER 310, 312), the reception means being capable of transmitting the received signal to each branch processing means, each branch processing means corresponding to a respective one of the base stations and arranged to modify the received signal by the operations of: (i) data equalization (Fig. 3, SPATIAL EQUALIZER 310, 312), based on a respective filter using a respective set of weights (column 6, lines 24-55); and (ii) decision means for using an output of each branch processing means to generate (Fig. 3, SUBTRACTOR 320) an error signal and an estimate signal indicative of the data in the received signal intended for the receiver (column 6, lines 48-52); and adaptation means for modifying the respective set of weights using the error signal (column 6, lines 48-52); regarding claims 3 & 10, said decision means combines (Fig. 3, COMBINER 314) the outputs of the plurality of branch processing means into a combined

signal. It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Rademacher, by using the features, as taught by Malkemes et al., in order to provide users with a flexible environment for using and locating their communications appliances. See Malkemes et al., column 1, lines 46-49.

*Allowable Subject Matter*

4. Claims 4 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

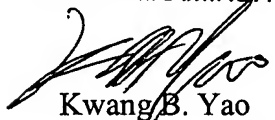
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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang B. Yao whose telephone number is 571-272-3182. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KWANG BIN YAO  
PRIMARY EXAMINER



Kwang B. Yao  
January 11, 2006